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CE Ex II 2 G X

Operation Manual

BINKS 460–Automatic Spray Gun

E	P 1 – 8

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Operation Manual
460 Automatic Spraygun
Important
Read and follow all instructions and Safety Precautions before using this equipment

Description

A lightweight automatic spray gun for small work suitable for use with most solvent based coating materials. The design features a single air supply to operate the single acting cylinder and provide the atomizing air. A remotely positioned two way control valve (supplied by user) triggers the gun. Coating material supply is by a pressure feed system.

IMPORTANT: These guns are not designed for use with highly corrosive or highly abrasive coating material and if used with such materials it must be expected that the need for thorough cleaning and/or the necessity for replacement parts will be increased. If there is any doubt regarding the suitability of a specific material, advise what material is to be used and/or submit a sample for test.

MODELS

The automatic spray gun type Binks 460 complies with ATEX regulations **94/9/EC**, **protection level II 2 G X T6 suitable for use in Zones 1 & 2.**

Gun Ref	Tip size	Tip model	Tip reference	Needle Ref	Air Cap model	Air cap ref
103010	0.75 mm	J930SS	200361	180086	J92P	200833
103013	1.0 mm	J940SS	200362	180380	J92R	200834
103019	1.5 mm	K960SS	200363	180087	K92P	200838
103027	1.0 mm	J940SS	200362	180086	J92P	200833
103058	0.75 mm	J930SS	200361	180086	J92R	200834
103062	1.0 mm	J940SS	200362	180086	J92S	200831
103081	0.5 mm	J920SS	200360	180086	J92P	200833

EC Declaration of Conformity

We, **Finishing Brands UK Limited, Ringwood Rd, Bournemouth, Dorset, BH11 9LH, UK**, as the manufacturer of the **Spray gun model 460**, declare, under our sole responsibility that the equipment to which this document relates is in conformity with the following standards or other normative documents:

BS EN 292-1 PARTS 1 & 2: 1991, BS EN 1953: 1999; and thereby conform to the protection requirements of Council Directive **98/37/EEC** relating to ***Machinery Safety Directive*****,** and;

EN 13463-1:2001, council Directive **94/9/EC** relating to ***Equipment and Protective Systems intended for use in Potentially Explosive Atmospheres*** *protection level* ***II 2 G X***.

D. Smith, General Manager

30th January 2013

Finishing Brands UK Limited reserves the right to modify equipment specification without prior notice.

⚠ SAFETY WARNINGS

Fire and explosion

Solvents and coating materials can be highly flammable or combustible when sprayed. **<u>ALWAYS</u> refer to the coating material supplier's instructions and COSHH sheets before using this equipment.**

Users must comply with all local and national codes of practice and insurance company requirements governing ventilation, fire precautions, operation and house-keeping of working areas.

This equipment, as supplied, is <u>NOT</u> suitable for use with <u>Halogenated Hydrocarbons</u>.

Static electricity can be generated by fluid and/or air passing through hoses, by the spraying process and by cleaning non- conductive parts with cloths. To prevent ignition sources from static discharges, earth continuity must be maintained to the spray gun and other metallic equipment used. It is essential to use conductive air and/or fluid hoses.

Personal Protective Equipment

Toxic vapours – When sprayed, certain materials may be poisonous, create irritation or are otherwise harmful to health. Always read all labels, safety data sheets and follow any recommendations for the material before spraying. ***If in doubt, contact your material supplier.***

The use of respiratory protective equipment is recommended at all times. The type of equipment must be compatible with the material being sprayed.

Always wear eye protection when spraying or cleaning the spray gun.

Gloves must be worn when spraying or cleaning the equipment.

Training – Personnel should be given adequate training in the safe use of spraying equipment.

Misuse

Never aim a spray gun at any part of the body.

Never exceed the maximum recommended safe working pressure for the equipment.

The fitting of non-recommended or non-original spares may create hazards.

Before cleaning or maintenance, all pressure must be isolated and relieved from the equipment.

The product should be cleaned using a gun-washing machine. However, this equipment should not be left inside gun-washing machines for prolonged periods of time.

Noise Levels

The A-weighted sound level of spray guns may exceed 85 dB (A) depending on the set-up being used. Details of actual noise levels are available on request. It is recommended that ear protection is worn at all times when spraying.

Operating

Spray equipment using high pressures may be subject to recoil forces. Under certain circumstances, such forces could result in repetitive strain injury to the operator.

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SPECIFICATIONS

Maximum WORKING PRESSURE		Universal Hose Connection	
Air supply P1 :	7 bar	Atomization air:	1 / 4''BSP/NPS
Material supply P2 :	7 bar	Cylinder air:	1 / 4''BSP/NPS
Min Cylinder Operating pressure :	4 bar	Material:	1 / 4''BSP/NPS
Maximum service temperature :	40° C		

MATERIAL of construction

Gun body	Aluminum
Tip	Stainless steel
Needle	Stainless steel

INSTALLATION

IMPORTANT: In order to ensure that this equipment reaches you in first class condition, protective coatings, rust inhibitors, etc., have been used. Flush all equipment through with a suitable solvent before use to remove these agents from material passages.
Note: A single hose supplies both atomizing and cylinder air. To prevent un-atomized coating material being expelled from the nozzle at the end of the spray cycle, all air should be exhausted through the gun. It is recommended that a two way valve should be fitted in the control line. If a three way valve is used, install a plug in the exhaust port.

Mount gun using the 12.7mm (1/2") rod or stud diameter and secure with screw 164392

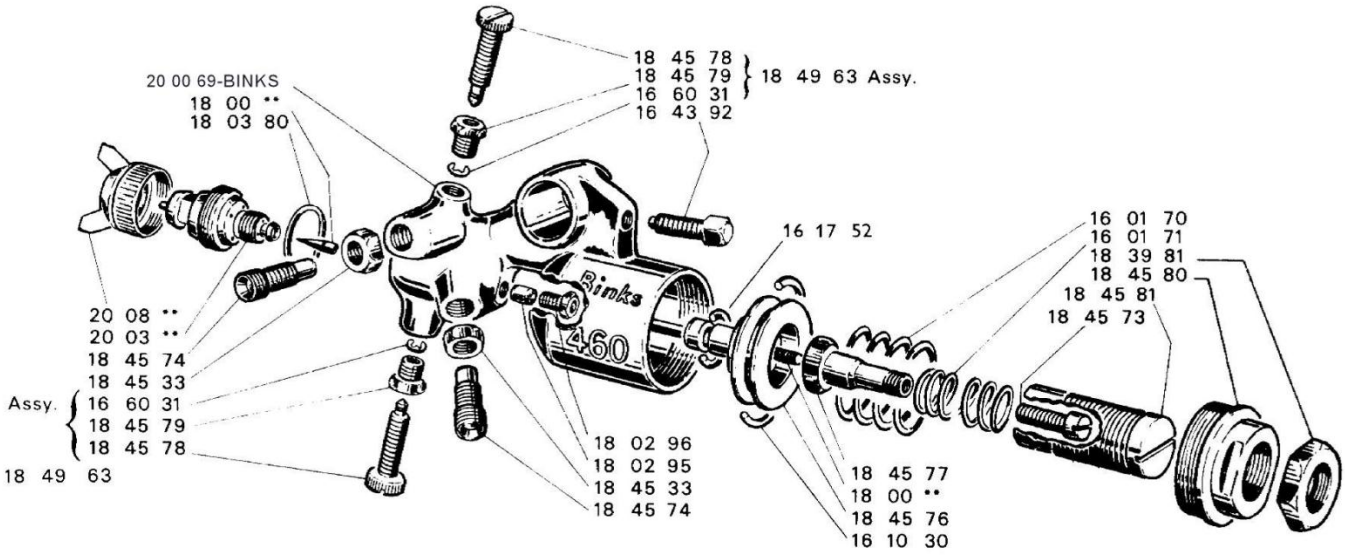
HOSING
Use filtered regulated air supply. The minimum air supply pressure required to operate the cylinder is 4.5 bar (67 ibf/in²) Connect air supply to connector 184574 indicated by markings “AIR” on the gun body. Connect coating material to the connector184574 on the gun body.

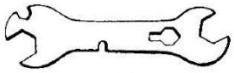
EARTHING the Spray gun must be earthed to dissipate any electrostatic charges which may be created by fluid or air flows. This can be achieved through the Spray gun mounting, or conductive air/fluid hoses. Electrical bond from the spray gun to earth should be checked with an ohmmeter. A resistance of less than 10^6 Ohms is recommended.

WARNING: See instructions under “Replacement of Parts”.

Recommended hose sizes up

To 10m (34ft) long:	Air Supply: 8mm (5 /16") bore,	Material: 8 mm (5 /16 ") bore.
To 5m (17ft) long:	Air Supply: 6mm (1 /4") bore,	Material: 6 mm (1 /4 ") bore.





Order No.	Description	Qty	KIT parts
160170	OUTER SPRING	1	1
160171	INNER SPRING	1	1
161030	O RING	1	1
20-4146	O RING (ex 161752)	1	1
164392	SCREW	1	
166031	CIRCLIPS	2	
See CHART	NEEDLE	1	
4900-5-1	BRUSH	1	
180295	PACKING	1	2
180296	PACKING NUT	1	1
180380	SEAL for TIP	1	2
183981	LOCK NUT	1	
184533	NUT	2	

Order No.	Description	Qty
184573	SCREW	1
184574	CONNECTOR	2
184576	PISTON	1
184577	NEEDLE COLLAR	1
184578	VALVE STEM	2
184579	SLEEVE	2
184580	END CAP	1
184581	SCREW	1
184786	HEXAGONAL KEY	1
184788-A	SPANNER	1
184963	FAN/ATOM CONTROL	2
200069-BINKS	GUN BODY	1
See CHART	TIP	1
See CHART	AIR CAP	1

Kit Reference 250035: Spares parts kits recommended quantities are based on one year usage for medium product sprayed.

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OPERATION

1. Mix, prepare and strain the material to be sprayed according to the paint manufacturers instructions. Use a lint free mesh to strain the material.
2. Adjust the spray gun controls and atomizing pressure before turning on the air and coating material supplies.

2.1. Fan pattern valve 184963 at the bottom of gun body (head side). Turn adjusting screw to fully open position, by turning counter-clockwise.

2.2. Atomizing control valve 184963 at the top of the gun body. Turn adjusting screw to fully open position, by turning counter-clockwise.

2.3. Needle adjustment. Fully close needle adjusting screw184581, release locknut 183981, turn clockwise until resistance is felt, then turn to the fully open position by turning counter-clockwise ten turns and secure with locknut 183981.

3. Regulate the air supply pressure to 4,5 bar (67 lbf/in²) and coating material pressure to 1 bar (15 lbf/in2)
4. Turn on air and coating material supplies and test spray by operating control valve. The recommended spray distance is 150 mm (6"). If the finish is too wet, reduce the coating material supply pressure, or turn the needle adjusting screw 184581 fully clockwise then gradually open until the desired pattern is achieved. If the atomization is too coarse increase the air pressure. The spray width can be reduced from fan to round by turning fan adjusting valve 184963 at the bottom clockwise.

   NOTE: If both ‘FAN’ and ‘ATOM’ valves 184963 are closed the air supply operates the cylinder only and will allow coating material to be jetted from the nozzle.

5. To prevent accidental discharge of coating material, always turn off and release pressure when the gun is not in use.

PREVENTIVE MAINTENANCE

FLUSHING THE SYSTEM.

1. Turn off coating material supply and relieve pressure.
2. Close both air valves 184963 ‘FAN’ and ‘ATOM’.
3. Replace coating material with a suitable solvent, reduce pressure and turn on supply.
4. Turn Remove air cap, trigger the gun by operating the control valve. Flush system until clean.

Clean air cap by immersing in solvent, brush or wipe clean. If any holes in the air cap are blocked use a toothpick or broom straw to remove the obstruction. Never use a steel wire or hard implement which will damage the air cap and result in a distorted pattern.

Lubrication: Daily lubricate with light mineral oil the valve stems 184578 and needle seal 180295 through holes in seal retainer 180296.

Occasionally coat the gun body cylinder section and springs (160170 & 160171) with mineral based grease.

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REPLACEMENT OF PARTS

Tip 2003:**

Remove parts 184580 end cap with needle adjusting screw and its lock nut, 160171 inner spring and 160170 outer spring and unscrew tip 2003** from body.
Caution: Replace any worn or damaged parts. Replace tip 2003** and tighten.
Recommended torque 13-14 Nm (115-125 lbf in²).
Fit parts 184580 end cap, 160171 inner spring and 160170 outer spring.

Valve assy 184963 :

Caution: Always turn stem valve 184578 fully counter-clockwise before fitting or removing valve assembly 184963 from gun body.
Remove valve assembly 184963 from gun body by removing parts 184579 valve body. It's recommended to replace the complete air valve if damaged.

Packing 18295:

Remove parts 184580 cap with needle adjusting screw and its lock nut, 160171 inner spring and 160170 outer spring and withdraw needle 1800** and piston 184576, unscrew the seal retainer 180296 and remove the packing 180295. Lubricate new packing with mineral oil, place the packing in front of the retainer and screw it into gun body. Tighten retainer sufficiently to seal but not to impede free needle movement. Lightly coat '0' rings 20-4146 & 161030 with mineral based grease.
Fit needle and piston assembly into gun body.
Reassemble parts; 160171 inner spring and 160170 outer spring & 184580 end cap.

Needle 1800:**

Remove parts 184580 cap with needle adjusting screw and its lock nut, 160171 inner spring and 160170 outer spring and withdraw needle 1800** and piston 184576.
Unscrew the locking screw 184573 at the back of the needle collar 184577, unscrew the needle 1800**. Replace the needle if damaged, screw the new needle into the collar until you will leave 1,2 mm free movement to the piston before to operate on the needle collar, this gap can be measured by maintaining the needle in position shut and measuring the piston movement sliding on it. Tight the locking screw 184573. Tighten retainer sufficiently to seal but not to impede free needle movement. Lightly coat '0' ring 20-4146 & 161030 with mineral based grease. Fit needle and piston assembly into gun body.
Reassemble parts; 160171 inner spring and 160170 outer spring & 184580 end cap.

Piston '0' ring 20-4146 & 161030:

Remove parts 184580 cap with needle adjusting screw and its lock nut, 160171 inner spring and 160170 outer spring and withdraw needle 1800** and piston 184576.
Replace '0' ring 20-4146 & 161030, lightly coat '0' ring with mineral based grease.
Fit needle and piston into gun body. Reassemble parts.

Connectors 184574:

Remove connector 184574 and clean threads in gun body.
Apply a medium strength thread locking/sealing compound to the external threads of the new connector.
Screw into gun body and tighten. Recommended torque: 14 Nm (125 lbf in).

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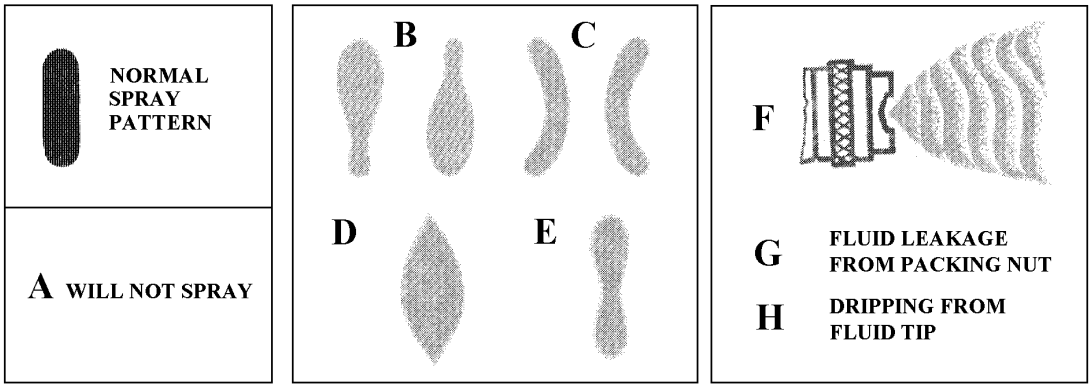
SERVICE CHECKS



	CAUSE		CORRECTION
A	1) No pressure at the gun 2) Piston stops moving 3) Screw 184581 not properly adjusted	A	1) Check air/material lines 2) Clean 3) Adjust
B-C	1) Material build-up on air cap/fluid tip	B-C	1) Clean air cap/fluid tip
D	1) Material too thick or too much	D	1) Thin or reduce material flow
E	1) Not enough material	E	1) Reduce air pressure or increase material flow
F	1) Insufficient material in tank or an obstruction in the hose. 2) Loose or damaged fluid tip	F	1) Fill tank or clear obstruction 2) Tighten or replace.
G	1) seal worn 180295 2) Seal retainer 180296 loose	G	1) Replace seal 2) Adjust
H	1) Dry packing 180295 2) Worn or damaged fluid tip 2003** or needle 1800** 3) Seal retainer 180296 tight	H	1) Replace 2) Replace 3) Adjust

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